WHAT IS CLAIMED IS:

1. A nonnaturally occurring dimerizing peptide.

2. The peptide of claim 1 that this is a homo-dimerizing peptide.

3. The peptide of claim 1 that lacks significant sequence identity with a naturally occurring peptide.

4. The peptide of claim 1 having a length of 30 amino acids or shorter.

5. A zinc finger complex, comprising a first fusion protein comprising a first zinc finger protein and a first peptide linker and a second fusion protein comprising a second zinc finger protein and a second peptide linker, wherein the first and second fusion proteins are complexed by specific binding of the first and second peptide linkers, and wherein the first and second peptide linkers are nonnaturally occurring peptides.

6. The zinc finger complex of claim 5, wherein the first and second peptide linkers are first and second copies of the same linker.

7. A method of selecting a dimerizing peptide, comprising:

(a) providing a phage display library in which a member displays a zinc finger protein fused to a peptide from its outersurface, the zinc finger protein being the same in different members, and the peptide varying between different members;

(b) contacting the library with a nucleic acid substrate comprising first and second binding sites for the zinc finger protein, whereby phage displaying a zinc finger protein fused to a dimerizing peptide preferentially bind to the substrate relative to phage displaying a zinc fusion protein fused to a nondimerizing peptide, and

(c) isolating the phage that bind to the substrate:

(d) sequencing a segment of the genome of a phage binding to the substrate to determine the identity of a dimerizing peptide.

8. The method of claim 7, further comprising repeating steps (a)-(c) with the phage display library in (a) in one cycle comprising phage from step (c) in a previous cycle.

9. The method of claim 7, further comprising

repeating steps (a)-(c) with the phage display library in step (a) in a subsequent cycle comprising phage encoding peptides that are variants of a peptide encoded by a phage in step (c) from the previous cycle.

10. The method of claim 7, wherein the first and second binding sites are in opposing orientations in the substrate.

11. The method of claim 7, wherein the phage displaying a zinc finger protein fused to the a dimerizing peptide bind to the substrate via display of two copies of the zinc finger protein and the dimerizing peptide, whereby the two copies of the zinc finger protein respectively bind to the first and second binding sites.

12. The method of claim 7, wherein the peptide is a random peptide.

13. The method of claim 7, wherein the peptide is 30 amino acids or fewer in length.

14. The method of claim 7, wherein the peptide is 15 amino acids or fewer in length.

15. A method of regulating or detecting a target sequence, comprising:

contacting the target sequence with a zinc finger complex, comprising a first fusion protein comprising a first zinc finger protein that specifically binds a segment of the target sequence and a first peptide linker and a second fusion protein comprising a second zinc finger protein that specifically binds a second segment of the target sequence and a second peptide linker, whereby the first fusion protein binds to the first segment of the target sequence, and the second fusion protein binds to the second segment of the target sequence, and the first and second fusion proteins bind to each other via the first and second peptides.

16. The method of claim 15, wherein the target sequence is present in an intact cell.

17. The method of claim 15, further comprising contacting the cell with an expression vector encoding the first fusion protein and/or the second fusion protein, wherein the expression vector enters the cell and is expressed to produce the first and/or second fusion protein.

18. The method of claim 15, wherein the target sequence is present in a patient.

19. The method of claim 15, wherein the target sequences is present in a cell extract.